

**A BACK-PROPAGATION NEURAL NETWORK
WITH ENHANCED NEURON CHARACTERISTICS**

Abstract of the Disclosure

A neural network system includes a feedforward network comprising at least one neuron circuit for producing an activation function and a first derivative of the activation function and a weight updating circuit for producing updated weights to the feedforward network. The system also includes an error back-propagation network for receiving the first derivative of the activation function and to provide weight change data information to the weight updating circuit.

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